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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,359	01/02/2002	Hideyuki Kurita	110609	4466

7590 06/19/2002
Oliff & Berridge
PO Box 19928
Alexandria, VA 22320

EXAMINER

DINH, TUAN T

ART UNIT	PAPER NUMBER
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2827

DATE MAILED: 06/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/936,359

Applicant(s)

KURITA ET AL.

Examiner

Tuan T Dinh

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Figures 6 and 7 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The abstract of the disclosure is objected to because all reference number should be in parenthesis. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1-3, 5, and 9-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakamura et al. (U. S. Patent 6,395,993).

As to claims 1 and 6, Nakamura discloses a flexible printed wiring board and a method as shown in figures 1-9 comprising

a first flexible printed wiring part (30-figure 3, column 5, line 47) having metal bumps (34, column 5, line 51) and a second flexible printed wiring part (10-figure 1e, column 5, lines 28-29) having connection pads (21, column 5, line 35), the metal bumps (34) and the connection pads (21) being connected to each other (see figure 4),

wherein the first flexible printed wiring part (30) comprises a conductive layer (32, column 5, line 50) and an insulating layer (33, column 5, line 33) adjacent thereto; holes (37, column 5, line 58) are provided in the insulating layer so as to reach the conductive layer; metal plugs (35, column 5, line 61) are formed in said holes (37) by an electrolytic plating method; and the tips of the metal plugs constitute the metal bumps that project from the insulating layer (column 5, lines 61-67).

As to claim 2, Nakamura discloses a flexible printed wiring board as shown in figures 1-9 wherein the insulating layer (33) is a polyimide layer (column 6, lines 5-7, and 58-59) and the metal plugs (35) are electrolytic copper plating plugs.

As to claim 3, Nakamura discloses a flexible printed wiring board as shown in figures 1-9 wherein the insulating layer is obtained by imidizing Polyamic acid (column 8, lines 63-67).

As to claims 5 and 9-11, Nakamura discloses a flexible printed wiring board as shown in figures 1-9 wherein the first flexible printed wiring part (30) and the second flexible printed wiring part (10) are stuck together by a thermoplastic polyimide (33).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al (U. S. Patent 6,395,993) in view of Yamada (U. S. Patent 4,950,527).

Nakamura ('993) discloses a flexible printed wiring board as shown in figures 1-9 wherein the metal bumps (34) of the first flexible printed wiring part (30) and the connection pads (21) of the second flexible printed wiring part (10) electrically connection together. Nakamura does not show said connection which being arranged in a zigzag fashion.

Yamada teaches an electrical connection of two flexible wiring board (A and B) which being arranged in a zigzag fashion disclosed in figures 1-3.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a zigzag fashion connected two circuit board as taught by Yamada to employ the electrical connection of Nakamura in order to provide spaces for flexible circuit boards having some components mounted on for another use purpose.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kataoka et al., and Farnworth et al. disclose related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T Dinh whose telephone number is 703-306-5856. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-1341 for regular communications and 703-305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

TD
June 17, 2002.


ALBERT W. PALADINI
PRIMARY EXAMINER